these findings at a molecular biological level, we have conducted a transcriptome microarray analysis of the liver and kidneys from these same animals. *Results*: The expression of 4224 and 4447 transcript clusters were found to be disturbed respectively in liver and kidney ($p < 0.01$, $q < 0.08$). Alterations in gene expression varied from −3.5 to 3.7 fold changes in liver and from −4.3 to 5.3 in kidneys. The analysis of pathways and toxicity processes showed that these disturbances in gene expression were representative of fibrosis, necrosis, phospholipidosis, mitochondrial membrane dysfunction and ischemia, which correlate with and thus confirm observations at an anatomical and histological level. *Conclusion*: Our results suggest that marked alterations in the transcriptome can be brought about by a GBH in an established laboratory animal model system at an ultra-low, environmental dose.

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P22-042
Validation of a modified QuEChERS extraction/GC–MS methodology for quantification of drugs of abuse in human samples

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In Forensic toxicology, blood, urine, tissues and organs are the most common samples analyzed. The use of biological matrices demands a pre-treatment before its injection into the chromatographic system for separation and detection of the target substances. Solid-phase extraction (SPE) and liquid–liquid extraction (LLE) are ordinary techniques used for this propose. In 2003, Anastassiades et al. had developed a new extraction method named QuEChERS (Quick, Easy, Cheap, Effective, Rugged and Safe) to analyze pesticides in vegetables and fruits, removing sugars, lipids, organic acids, steroids, proteins, pigments and water excess all in one. Its advantages are the quicker and easier handling, the necessity of low solvent volumes and, low cost when compared with other extraction techniques. This process involves a sample extraction using acetonitrile, followed by liquid–liquid partitioning formed by anhydrous magnesium sulfate ($MgSO_4$) and sodium chloride (NaCl). The goal of our work was the development and validation of a modified QuEChERS method for the extraction of different drugs of abuse namely codeine, morphine, heroin, 6-monoacetylmorphine, methadone, cocaine, cocaethylene, tramadol, ethylmorphine, papaverine, desomorphine, EDDP, EMDP, tapentadol and O-desmetyltramadol (M1) from biological samples with forensic interest and analysis of them by GC–IT/MS. The method proved to be selective and the regression analysis for all analytes was linear in the range of 125–2000 ng/mL with correlation coefficients >0.9. The coefficients of variation did not exceed 15%. The limit of detection varied between 7 and 62.5 ng/mL, and the limit of quantification varied between 15 and 125 ng/mL for all the analytes. The recovery was at least 50%. The suppression of the dispersive SPE step and the use of basified solvents proved to allow and efficient extraction in less time. A sensitive, reproducible and relatively simple GC–EI/MS method was developed and validated to screen and quantify the proposed drugs of abuse in blood samples. Since this method affords no especial equipment, is less laborious and, consume a minimal time, it should be very useful for forensic routine analysis and constitute an alternative to those based on solid phase-extraction.

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P22-043
The setting of the leukemia in residents of metropolitan region of Rio de Janeiro state during the period 2006–2014

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The process of industrialization in Brazil allowed economic development specially in the Southeast region which is, currently, responsible more than 50% of Brazilian GDP. The State of Rio de Janeiro has considerable representation in this scenario. In addition to financial growth, excessive urbanization and industrialization also increased environmental contamination by chemicals, specially from those processes that use hazardous materials able to cause serious damage to the environment and to human health. Within this relationship, the onset of leukemia in urbanized environments is highlighted in the scientific community in attempt to establish their interactions and causes. Thus, this study aimed to evaluate the setting of hospitalizations for leukemia among residents of the metropolitan area of the State of Rio de Janeiro recorded by the Brazilian health care system (SUS) from January 2006 to March 2014, taking into account the residence place. The estimated morbidity indicator was the hospitalization rate for leukemia by residence place and through the rate ratio was possible to compare scenarios for each city studied. For the development of this work 19 municipalities were selected using the following criteria: distance of the state capital, covering an area of up to 180 km from the capital; Similarities in health policies, as the number of public health facilities; urban and rural distribution of population and the size of the industrial parks. Thus, the selected municipalities were: Belford Roxo, Duque de Caxias, Itaboraí, Itaguaí, Japeri, Macaé, Mage, Marica, Mesquita, Nilopolis, Niterói, Nova Iguaçu, Queimados, Rio Bonito, Rio de Janeiro, São Gonçalo, São João de Meriti, Seropédica and Tanguá. The municipalities of Macaé, Itaboraí, Queimados and Duque de Caxias had the highest hospitalization rates for leukemia for both sexes in the adult age group (≥20 years) and morbidity force 6 times higher than the average of the municipalities of reference. An intrinsic feature of these municipalities is the massive presence of potentially polluting industries and activities such as oil refining. It is noteworthy that despite indications between the municipalities, the direction of causality can only be determined categorically through the individual studies.

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Human neonatal mesenchymal stem cell spheroids-conditioned medium accelerates skin regeneration

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Cutaneous wound healing consists of a complex series of events involving inflammation, cellular migration/proliferation, vasculogenesis, and tissue remodeling. Chemical exposure to toxic agents